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Deputy Minister.

LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA.

BULLETIN No. 168

TINCTURE OF OPIUM.

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TINCTURE OF OPIUM.

OTTAWA, December 16, 1908.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report upon 31 samples of Tincture of Opium, (commonly known as Laudanum). This is a very important preparation of Opium, and its activity is due to its content in morphine. *Opium* may contain anywhere from 6 to 15 per cent. of Morphine (Allen. Commercial Organic Analysis; Vol. III, part 2, page 333). This great variability of the crude drug makes it necessary that its alcoholic extract should be carefully standardized before being employed in preparing the Tincture. Minute directions are given in the British Pharmacopœia for the valuation of the Extract, and for the manufacture of the Tincture. The finished Tincture should contain 0·75 gramme of morphine (anhydrous), in each 100 cubic centimetres. Since it is practically impossible to keep an alcoholic tincture at absolutely constant strength, under ordinary conditions of pharmacy, the B. P. fixes definite limits (maximum and minimum) for this tincture, requiring that it shall not exceed a morphine strength of 0·80 nor fall below a morphine strength of 0·70 gramme per 100 cubic centimetres.

The Tincture of Opium of the United States Pharmacopœia is standardized with equal care; but is a much stronger tincture than that of the B. P. It contains 1·20 to 1·25 gramme of crystallizable morphine per 100 cubic centimetres, being therefore stronger than the B. P. Tincture in the ratio of 5 to 3. The average dose of the U. S. P. Tincture is fixed at 8 drops; while that of the B. P. Tincture is stated to be 5 to 15 drops for repeated administration, or 20 to 30 drops for a single administration.

It is obvious that in all the samples now reported, the intention of the manufacturer has been to meet the B. P. standard.

There is every evidence to show that this very important preparation is of good quality in Canada. Of the 31 samples now reported, 10 are strictly within the limits of B. P. strength, while 6 others are practically within the limits. This interpretation of the results of analysis is made necessary from consideration of the fact that duplicate analyses, made with the greatest care, may differ about 0·020 in terms of morphine

percentage so that (unless one could take the mean of a number of independent analyses of the same sample, a condition obviously impossible in this class of work) we must accept a possible error of 0·020, and consider percentages found between 0.680 and 0·820 as complying with the B. P. standard. Even the extremest variations found maximum = 0·940 morphine, minimum = 0·636 morphine, cannot be considered as indicating any dangerous deviation from the B. P. standard These cases may be due to some carelessness in manufacture, to evaporation of the solvent through too long keeping in imperfectly closed bottles, or to additions of alcohol or water, with a view to making up loss due to evaporation. A strict interpretation of pharmacopœal directions would classify the samples herein reported as follows:—

	Samples.
Within standard limits	16
Above " "	5
Below " "	10
Total	31

For reasons already given I consider that it would be going too far to describe the 15 samples included under the last two categories as adulterated, although a strict interpretation of the results of analysis might warrant this.

The only previous examination of Tincture of Opium made under the Adulteration Act, is reported in Bulletin No. 60, (January 1899). On that occasion 15 samples were reported, and found to be as follows:—

	Samples.
Morphine content correct	8
" " high	2
" " low	5
Total	15

I beg to recommend the publication of this report as Bulletin No. 168.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

BULLETIN No. 168—TINCTURE OF OPIUM.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. $ cts.	Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.	Results of Analysis. Morphine. p.c.	Remarks and Opinion of the Chief Analyst.
DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.									
1906.								p. c.	
Oct. 13	Tincture of Opium.	33756	F. J. Harrison, Sydney, N.S.	6 oz..	65	Vendor		0·909	Slightly above official strength, B.P., and not up to U.S.P. strength.
" 13	"	33757	C. J. Sparrow, Sydney, N.S.	6 " ..	60	"		0·800	Standard strength.
DISTRICT OF PRINCE EDWARD ISLAND—T. MOORE, INSPECTOR.									
Oct. 29	Tincture of Opium.	31416	A. W. P. Gourlie, Summerside.	6 oz..	90	Burroughs, Wellcome & Co., London, Eng.		0·709	Standard strength.
" 29	"	31417	W. B. Dyer, Alberta	6 " ..	72	Park, Davis & Co., Walkerville, Ont.		0·812	Practically of B.P. strength.
DISTRICT OF NEW BRUNSWICK—J. C. FERGUSON, INSPECTOR.									
Oct. 21	Tincture of Opium.	29849	E. Clinton Brown, St. John, N.B.	6 oz..	90	Vendor		0·806	Practically of B.P. strength.
Nov. 6	"	29850	Fairweather Bros., Moncton.	6 " ..	60	Lyman, Sons & Co., Montreal.	Sample from original pkge labelled Tr Opii, prepared according to British Pharmacopœia.	0·636	Slightly below B.P. strength.

DISTRICT OF QUEBEC—E. BELAND, INSPECTOR.

Oct.	21	Tincture of Opium.	34477	F. E. Gilbert, Rivière du Loup.	6 oz.	60	Lyman & Son, Montreal		0·670	Slightly below B.P. strength.
"	21	"	34480	E. O. Cloutier, Rivière du Loup.	6 "	60	W. Brunette & Cie, Quebec.		0·736	Standard strength.
"	21	"	34482	Thos. Kane, Rivière du Loup.	6 "	50	Lyman & Son, Montreal		0·818	Practically of standard strength.

DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR.

Oct.	29	Tincture of Opium.	886	J. E. St. Onge, Valleyfield	6 oz.	1 00	Lyman, Sons & Co., Montreal.		0·710	Standard strength.
"	30	"	887	H. Campeau, Montreal	6 "	60	Lyman, Knox & Co., Montreal.		0·668	Practically of standard strength

DISTRICT OF MONTREAL—J. J. COSTIGAN—INSPECTOR.

Oct.	5	Tincture of Opium.	32781	Dr. Guy, St. John's, P.Q.	6 oz.	60	Not known		0·664	Slightly below B.P. strength.
"	10	"	32782	J. C. Sutherland, Richmond, P.Q.	6 "	75	Lyman, Sons & Co		0·680	" "

DISTRICT OF OTTAWA—J. A. RICKEY, INSPECTOR.

Oct.	13	Tincture of Opium.	22706	Clarence H. Lewis, druggist, Ottawa.	6 oz.	60	Burroughs, Wellcome & Co., London, Eng.	Sample made from conc. Tr. Opii by diluting with alcohol to B. P. strength. Sold as Tr. Opii B. P.	0·681	Practically of standard strength.
"	13	"	22707	A. R. Farley, druggist, Hull, P.Q.	6 "	60	Vendor	Sold as Tr. Opii B.P.	0·902	Slightly above B.P. strength, and not up to U. S. P. standard.

DISTRICT OF KINGSTON—JAS. HOGAN, INSPECTOR.

Nov.	3	Tincture of Opium.	30081	O. G. Johns, Cobourg	6 oz.	50	Vendor		0·641	Slightly below B.P. strength.
"	3	"	30082	A. J. Gould, Cobourg	6 "	50	"		0·787	Standard strength.

BULLETIN No. 168—TINCTURE OF OPIUM.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. $ cts.	Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report.	Results of Analysis. Morphine. p.c.	Remarks and Opinion of the Chief Analyst.
DISTRICT OF TORONTO—H. J. DAGER, INSPECTOR.									
Oct. 23	Tincture of Opium.	35199	W. A. Howell, Hamilton..	6 oz..	90	Vendor.....	Labelled Laudanum.	0·940	Slightly above B.P. strength, and not up to U.S.P.
" 27	"	35200	W. H. Andrew, Toronto..	6 " ..	60	Lyman Bros. & Co., Ltd., Toronto.	"	0·641	Slightly below B.P. strength.
DISTRICT OF LONDON—T. KIDD, INSPECTOR, AND J. TALBOT, ACTING INSPECTOR.									
Oct. 5	Tincture of Opium.	30989	H. C. Dunlop, Goderich...	6 oz..	1 00	Nat. Drug Co., Hamilton, Ont.	.....	0·703	Standard strength.
Nov. 15	"	34698	John D. McKee, Guelph..	6 " ..	1 20	Vendor.....	Sample made from conc. Tr. Opii purchased from Burroughs, Wellcome & Co.	0·635	Slightly below B.P. strength.
DISTRICT OF WINDSOR—J. TALBOT, INSPECTOR.									
Oct. 16	Tincture of Opium.	34656	W. A. Pond, Windsor, Ont.	6 oz..	75	Dom. Drug Co., Hamilton.	.....	0·728	Standard strength.
" 19	"	34659	Dr. W. L. Smith, London, East.	6 " ..	65	Nat. Drug Co., London ...	.....	0·717	"

DISTRICT OF MANITOBA—A. C. LARIVIERE, INSPECTOR.

Oct.	28	Tincture of Opium.	35707	F. Whaley, Winnipeg.....	6 oz..	60	Lyman, Sons & Co., Montreal.	Labelled Tr. Opii, Poison.		0·670	Slightly below B.P. strength.
"	28	" .	35708	D. W. Bradshaw, Winnipeg.	6 " ..	60	Vendor	.....		0·784	Standard strength.

DISTRICT OF CALGARY—R. W. FLETCHER, INSPECTOR.

Nov.	24	Tincture of Opium.	35481	E. M. Cawker, Medicine Hat.	6 oz..	90	Lyman, Sons & Co., Montreal.	.....	.....	0·664	Slightly below B.P. strength.
"	24	" .	35482	C. T. Pringle, Medicine Hat.	6 oz..	90	"	.....	.....	0·664	" "

DISTRICT OF VANCOUVER—J. F. POWER, INSPECTOR.

Oct.	8	Tincture of Opium.	34356	Post Office Drug Store, Vancouver.	6 oz..	1 50	Nat. Drug Co., Vancouver.	.....	.....	0·769	Standard strength.
"	8	" .	34359	Henderson's Drug Store, Vancouver.	6 " .	1 00	Henderson Bros., Vancouver.	.....	.....	0·824	Practically of standard strength.

DISTRICT OF VICTORIA—D. O'SULLIVAN, INSPECTOR.

Nov.	30	Tincture of Opium.	39257	Dean [illegible] Stocks.....	6 oz..	1 00	Henderson Bros., Victoria.	.....	.....	0·880	Slightly below B.P. strength; not up to U.S.P.
"	30	" .	39258	Hall & Co.	6 " ..	75	Vendors.....	.....	.....	0·832	" "